AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1-9 (canceled).

Claim 10 (currently amended): A surface acoustic wave sensor for detecting the minute mass applied to a surface acoustic wave element on the basis of the change in frequency using an SH-type surface acoustic wave, the surface acoustic wave sensor comprising:

a rotated Y-cut $LiTaO_3$ substrate having Euler angles of ~~(0°, 0° to 18°, 0° ± 5°) or (0°, 58° to 180°, 0° ± 5°)~~(0°, 120° to 140°, 0° ± 5°);

electrodes, principally containing Au, and arranged on the $LiTaO_3$ substrate to excite a surface acoustic wave; and

a reaction membrane, bound to a target substance or a binding substance bound to the target substance, covering the electrodes arranged on the $LiTaO_3$ substrate; wherein

the electrodes have a normalized thickness of about ~~0.8% to about 9.5%~~ 3.0% to about 5.0%, the normalized thickness being determined by normalizing the thickness of the electrodes by the wavelength of the surface acoustic wave;

the surface acoustic wave element is a resonator type surface acoustic wave element; and

the electrodes include at least one interdigital electrode and reflectors arranged on both sides of the at least one interdigital transducer in a direction of propagation of a surface acoustic wave.

Claim 11 (canceled).

Claim 12 (previously presented): The surface acoustic wave sensor according to Claim 10, further comprising a bonding layer, placed between the reaction membrane and the electrodes, and arranged to improve the bond between the reaction membrane and the electrodes.

Claim 13 (previously presented): The surface acoustic wave sensor according to Claim 10, further comprising a protective layer, placed between the reaction membrane and the electrodes, lying over the electrodes and regions outside the electrodes.

Claim 14 (previously presented): The surface acoustic wave sensor according to Claim 12, further comprising a protective layer, placed between the bonding layer and the electrodes, lying over the electrodes and regions outside the electrodes.

Claim 15 (previously presented): The surface acoustic wave sensor according to Claim 10, wherein the electrodes have a normalized thickness of about 1.2% to about 8.5%, the normalized thickness being determined by normalizing the thickness of the electrodes by the wavelength of the surface acoustic wave.

Claim 16 (previously presented): The surface acoustic wave sensor according to Claim 15, wherein the electrodes have a normalized thickness of about 1.9% to about 6.6%, the normalized thickness being determined by normalizing the thickness of the electrodes by the wavelength of the surface acoustic wave.

Claim 17 (canceled).

Claim 18 (previously presented): A biosensor comprising the surface acoustic wave sensor according to Claim 10, wherein the reaction membrane includes a substance bound to a biological substance that is a target substance and the mass applied to a surface of the substrate of the surface acoustic wave sensor is varied due

to the bind of the biological substance to the reaction membrane.